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Hugh G. Calkins
Regional Conservator

TIJERAS CANYON - MORIARITY AREA

Regional Bulletin No. 39
Conservation Economics Series No. 12
May, 1937

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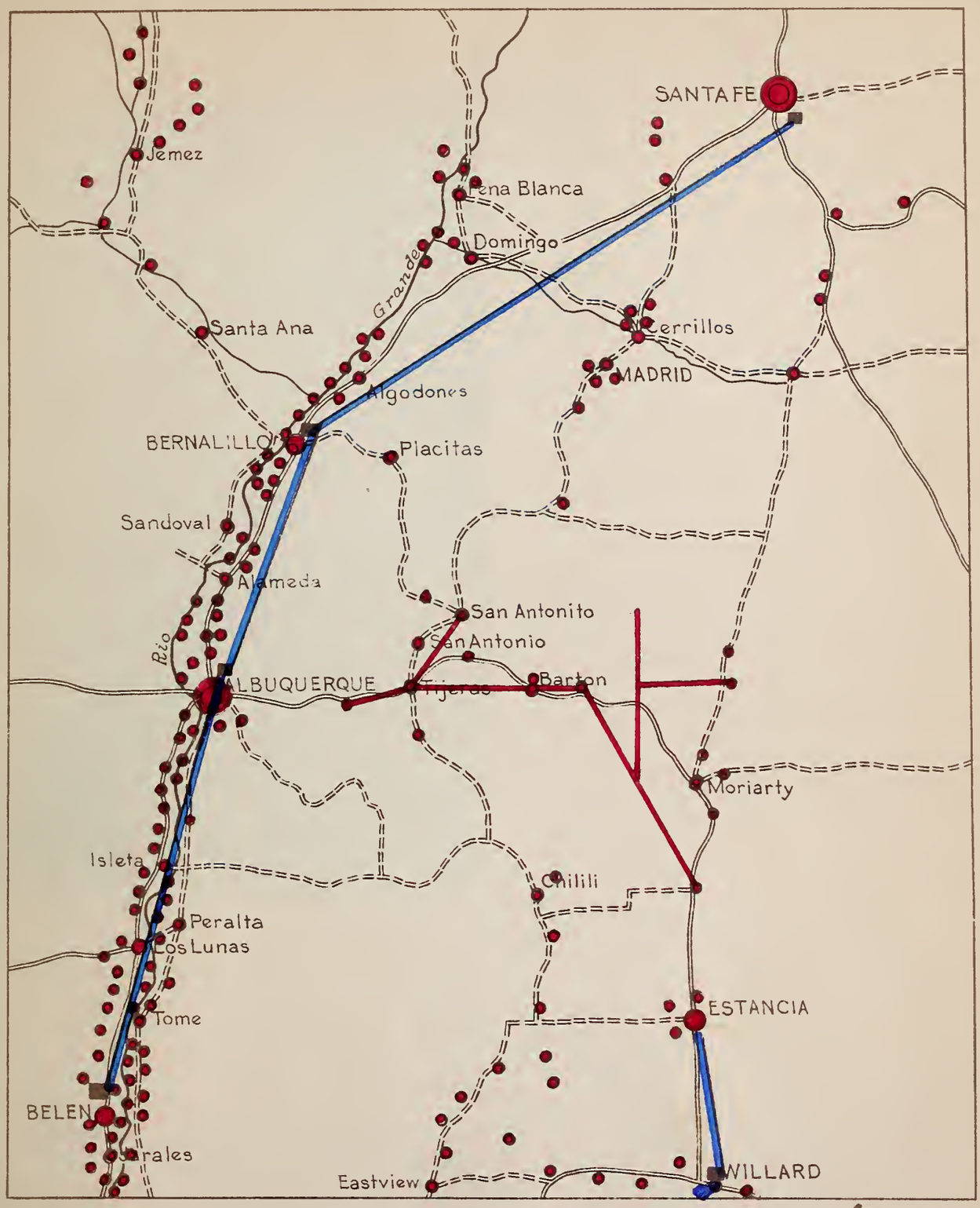
TIJERAS CANYON - MORIARITY AREA:

A SUMMARY

The area surrounding the proposed power line, as indicated on the accompanying map, is not homogeneous in terms of either physical or social characteristics. It may be described physically in terms of two rough sub-divisions. The western half extends from the mouth of Tijeras Canyon 12 miles east of Albuquerque almost to the village of Barton, 26 miles east of Albuquerque. Its western border is the bare and precipitous west face of the Sandia mountains and it includes the rugged, heavily forested mountain country which gradually subsides into a gently rolling, wooded slope which extends to just beyond Barton. This country is drained by Tijeras Creek, an intermittent stream, which runs through the canyon. Eight or ten small concentrated settlements, each including from 10 to 50 families, are located in the small patches of cultivable land next to the beds of Tijeras Creek and the washes that drain into it from north and south.

The eastern half of the area touched by the proposed line extends from Barton about 15 miles eastward to an arbitary line to the east of the villages of Moriarity and Otto. Just a few miles east of Barton the wooded, rolling terrain levels off into the treeless, flat plain of the Estancia Valley, an inland drainage, which extends about 20 miles north, 45 miles south, and 20 miles east from Moriarity. Within this eastern portion of the area under

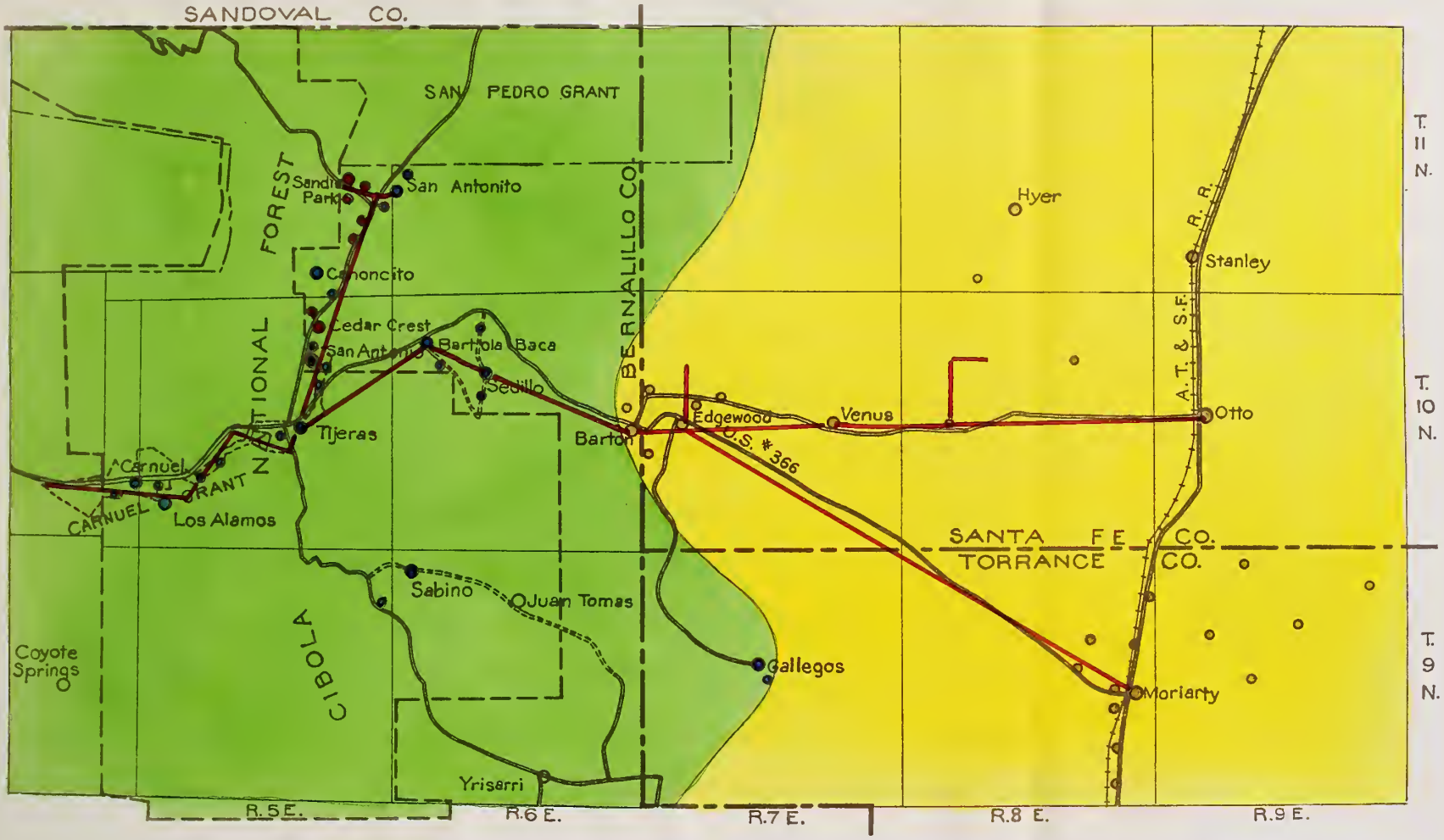


SCALE - 1" = 11 MILES - APPROX.

ALBUQUERQUE AND SURROUNDING AREA

LEGEND:

- 200 Persons
- Urban Center (Albuquerque - 37,000 (Santa Fe - 11,000
- Existing Power Line and Generating Plant
- Proposed R.E.A. Line



P O P U L A T I O N

1 9 3 7

Scale - 4" = 1 mile

Tijeras Canyon - Moriarity Area

LEGEND:

Wooded Mountain Area

Plains. Dry Farming Area

Proposed R.E.A. Line

- 10 Spanish-American Village Families

- 10 Resident Resort Village Families

- 10 Resident "Anglo" Dry Farm Families (Spotting of Location Approximate)

consideration cultivated land and farm houses occur singly, scattered after the mid-western pattern. A few settlements, consisting ordinarily of a few stores and gasoline stations, a bean warehouse, and a small cluster of houses, are scattered along the roads. Moriarity, much the largest of these, includes about 30 families.

The two areas distinquished by physiographic features are also marked by distinct social characteristics, though within the mountain area still another sub-division must be made.

In the eastern portion, extensively settled for about 30 years, are anglo (as all non-Spanish whites in the area are called) commercial farmers, living for the most part on scattered farms, cultivating, by dry-farming methods and with the use of mechanized equipment, relatively large acreages, principally devoted to pinto beans. In the western portion is a Spanish-American population living in concentrated villages several hundred years old, dependent primarily upon the non-commercial use of small tracts of semi-irrigated or dry land in the narrow valleys along the mountain washes. Their farm equipment is horse-drawn and their principal crops are corn, beans, and vegetables raised for home use rather than for sale. Their scanty cash incomes are derived from wood-hauling and occasional wage labor.

Another set of communities has grown up in the mountain

area within the past ten years. These are groups of cabins and cottages that string from Tijeras Canyon 6 or 7 miles up the San Antonio Wash to Sandia Park. They are occupied by residents of Albuquerque, tourists, and healthseekers, people not dependent upon the resources of the area itself for livelihood. Together these people constitute a resort and summer population.

Thus the population of the whole area divides itself into three distinct and entirely different groups. In terms of a market for electric power each of these groups must be given separate consideration and appraisal.

TIJERAS CANYON

The 240 families or approximately 1,100 persons who constitute the population of the 10 Spanish-American mountain villages do not appear to be potential users of electric power. Irrespective of the presence or absence in this group of desire for electric power, their ability to pay for it is extremely limited. Total cash income for these 240 families in 1936 was approximately $63,000 with $24,000 of it derived from the sale of wood, $6,000 from non-relief wage work, $3,000 from the sale of livestock, and $30,000 from Works Progress Administration employment. One hundred and sixty families, two-thirds of the total number, had cash incomes under $250. The total range of cash income per family was from under $100 to about $700. Some 45 families had cash incomes between

$250 and $500, and 30 families had between $500 and $700. All of the latter group and 30 out of the 45 families in the $250 to $500 group derived the bulk of their cash income from Works Progress Administration employment. Ninety out of the total 240 families had Works Progress Administration employment during 1936. Only 40 had non-relief wage work, during the same year, and the earnings of only about 15 of them exceeded $200 for the year. In no case did earnings from non-relief wage work exceed $480. During 1935, 138 out of the 240 families received direct relief.

In addition, during the years 1935 and 1936, a total of 40 loans amounting to $11,300 were made in these villages by the Rural Rehabilitation Division of the Resettlement Administration. Of this only $2,700 has been repaid to date. The balance constitutes a lien on the resources of the villages. Another federal agency, the Farm Credit Administration, in 5 years from 1931 to 1935, gave 55 emergency crop and seed loans totaling $4,100 of which $2,900 to date remains unpaid.

From the 385 acres of semi-irrigated land and the 4,700 acres of dry farm land owned by these 240 families practically no cash income is derived. Likewise the 2,200 cattle and horses and 3,000 sheep owned are not productive of any significant amount of cash income. Both land and livestock are relatively evenly and widely distributed among these families and serve to provide a

major portion of the food supply. It seems doubtful, however, that cash incomes ranging around $250 can provide adequately for the remaining food required, clothing, and other minimum essential items entailing cash expenditure.

The population of these villages has been constant for a long period, as indicated by local reports and the United States Census figures for 1910, 1920, and 1930. Long ago all the land in the vicinity possible of cultivation was in use. Three thousand and five hundred acres of the dry farm land currently owned by the villagers is out of the immediate area, in a natural clearing in the rolling wooded country several miles east of San Antonito. This was taken up around the year 1905 to relieve the scarcity already felt in the mountain area. The possibilities of expansion of population in these villages seem dim, with contraction far more likely unless governmental subsidy is to be indefinitely continued. In sum, this group of the population does not constitute a market for electric power. For them, in the absence of any program for the widening of the resource base of their economy, and in the continued absence of any extensive non-relief employment opportunities, electric power cannot become an available facility.

DRY FARMING AREA

The 210 families or approximately 1,000 people who live in the dry farming area may be considered potential users of electric

power. They constitute a market featured, however, by the uncertainty characteristic of their incomes. They are dependent almost entirely upon a single resource, dry farm land. The cultivation of this land under the conditions of precipitation which prevail in the area is a hazardous enterprise. Annual precipitation in the area over a recent 11-year period averaged about 14 inches, ranging between 8 and 18 inches and being under 15 inches 8 years out of 11. Within the past 15 years there have been 3 of complete crop failure. In the other 12 years yields of beans have ranged from 100 to 1,000 pounds per acre, averaging over the whole period about 300 pounds. Bean prices have been almost as variable as yields, ranging in the past 10 years from $1.15 to $4.75 per hundred pounds. On a typical farm with 100 acres in beans gross income from crops in the past 10 years has varied from 0 to $3,900, has been under $1,000 five years out of the ten, and under $500 four years out of the ten. With actual cash production costs on $100 acres approximately $500 in any year of yield, the results have been increasing indebtedness and tenancy and marked fluctuation in the farm population.

There are now an estimated 20,000 acres cultivated by approximately 190 families in the area. Although the number of families and farms in the area has increased by 60 or 70 in the past 5 years, population is still lower than it was in 1910,

shortly after the time of original settlement, and there is, according to reports, additional unused cultivable land in the vicinity of Moriarity. This is generally supposed to be poor quality land. The return of former residents in the past 5 years probably should be taken, however, more as an indication of unsatisfactory conditions elsewhere than as a portent of future prosperity or growth in this area. The $7.00 to $15.00 per acre price of land, and the equally low rentals indicate the value of the land but also facilitate a return to farming in periods of unusual depression. In 1935 after the total crop failure of 1934, 97 families received assistance from the Federal Emergency Relief Administration totaling $6,900. In 1936, 29 families derived income totaling $9,400 from Works Progress Administration employment. Loans totaling $36,000 were made by the Rural Rehabilitation Division of the Resettlement Administration during 1935 and 1936. To date only $14,000 has been repaid. Fifty-two farms are mortgaged to the extent of $56,000 to the Federal Land Bank. On these there is practically no delinquency. Short-term loans have been made by other federal lending agencies and are heavily delinquent. In sum, there seems no reason to believe that the population of the area will increase, though governmental assistance during years of drought may serve to prevent any large scale abandonment of farms.

A saving factor for many of the farmers in the area has been the income derived from the sale of milk. Many farms keep a

few milk cows from which incomes ranging from $10 to $30 per month are obtained, except in years of drought when forage crops too fail. This one concession to security permitted by the character of the area has served, along with federal assistance in recent years, to sustain farming in the hope that some time a year of bumper crops will coincide with a high bean price.

For many of these farmers the cost of electric power will not be a not additional cost, but partially a replacement cost since expenditures are now made for some form of lighting. The possibilities of efficient productive use of electric power seem limited but refrigeration of milk may result in slightly higher returns from that commodity. Partially on the basis of these two factors some of them may be able to use and pay for electric power.

The 10 or 15 business establishments, with their 10 or 15 employees, and the schools with 7 teachers, constitute the only sources of non-agricultural income in the area. These are entirely dependent upon the local farm population. The approximately 30 families, partially or wholly dependent upon this type of income, are probably in a position to use electric power so long as the farm population remains. Only to a degree, however, are their incomes and their continued occupancy of the area in their present numbers less uncertain than those of the farm population itself.

SUMMER RESIDENTIAL COMMUNITIES

The third group in the population of the area owes its

presence to none of the productive resources of the area but rather to those of sun and air, scenery and climate. The people who occupy the 180 cabins and cottages scattered along Tijeras Canyon and the San Antonio Wash are residents in but not inhabitants of the area. They are people regularly employed in Albuquerque or possessed of independent incomes and in the area for their health. All of them may be regarded as certain users of electric power.

The growth of this resort area has paralleled that of Albuquerque. In 1920 Albuquerque was a town of 15,000 people; this resort area did not exist. In 1928 the population of Albuquerque was approximately 25,000; there were 34 residences of the resort type in the mountain area. Since 1932 Albuquerque has grown rapidly as a health center and a center of government activity in the Southwest. From perhaps 600 the number of government employees has risen to 1,750 at this time. Construction in Albuquerque has risen from $500,000 in 1933 to $2,500,000 in 1936. Population of Albuquerque is now estimated at 38,000. In the resort communities there are now 36 permanently resident families, 42 individually owned summer houses, and 104 cottages owned in groups by a few operators. Twenty more cottages are under construction. The cottages are partially rented in winter and completely occupied during the 4 or 5 months of summer. So long as Albuquerque continues to grow, this resort population and the attendant stores and dance halls of the area will increase and afford a constant market for electric power.

The three distinct population groups of the area under consideration constitute different types of markets in terms of electric power: one is a certain and possibly expanding market, another is uncertain in every respect, and the third is no market at all.

The possibilities of extension of the area under consideration are limited and do not increase the reliability of the market as a whole. From San Antonito northeast along the mountains to Madrid, a distance of 23 miles, there is a scattered population totaling in 1930 about 350, and less now. This population has been on the decline since 1910 with the progressive abandonment of small mines. Those people that remain constitute largely a stranded population with no adequate basis of livelihood. Madrid, a mining town of about 1,100 people, has, as is indicated on the accompanying map, a power plant connected with the mine, which supplies the town.

To the south from Tijeras along the mountains are a number of small Spanish-American settlements totaling approximately 1,000 people. These are similar to those within the area described above and as a market for electric power may be similarly characterized.

In the Estancia Valley to the north and east of Moriarity scattered in and around the places called Otto and Stanley are farms supporting approximately 300 people. In the area to the south about 12 miles towards Estancia there are approximately 160 people mostly

on scattered farms but with 10 families concentrated at McIntosh. The characteristics of these areas of the Estancia Valley are almost indentical with those of the segment of it described above. Farther south in the Estancia Valley are the larger towns of Estancia, Willard, and Mountainair, which as the map indicates are already supplied with power by a private utility company. Whether the proposed line should be extended into the Estancia Valley area surrounding Moriarity may depend upon the cost of supplying power to small scattered population units, and upon a judgment as to the capacity of such a population as that described to pay these costs.

The following pages contain more extended descriptions of the three groups of the population of the area under consideration.

UNIT DESCRIPTIONS

TIJERAS CANYON VILLAGES

The mouth of Tijeras Canyon is about 10 miles east of Albuquerque, and the canyon itself extends some 11 miles in a northeasterly direction in Townships 10 and 11 north and Ranges 4, 5, and 6 east, Bernalillo County. Tijeras Creek, an intermittent stream, drains a rugged, heavily wooded terrain with a minimum of cultivable land. The population lives in straggling communities along the highway (U.S. and State Highway #366) and in the cultivable land patches next to the beds of Tijeras Creek and the washes that drain into it from north and south.

There are four settlements, divided by stretches of rough country, along Tijeras Canyon, and there are four settlements along the San Antonio side wash as follows:

Tijeras		San Antonio	
1. Carnuel	T 10-N, R 4-E	1. San Antonio	T 10-N, R 5-E
2. La Tijera	T 10-N, R 5-E	2. Cedar Crest	T 11-N, R 5-E
3. Primer Agua	T 10-N, R 5-E	3. Sandia Park	T 11-N, R 5-E
4. Sedillo	T 10-N, R 6-E	4. San Antonito	T 11-N, R 6-E

All of these settlements, with the exception of Cedar Crest and Sandia Park, are sufficiently similar to be treated in a single section of this report. Cedar Crest and Sandia Park, because their population is largely made up of summer residents from Albuquerque or people who have outside income, will be treated under a separate section.

The people of the villages of Carnuel, La Tijera, Primer Agua, Sedillo, San Antonio, and San Antonito are, with only a few exceptions, Spanish-American wage laborers and small farmers. The landholdings are very small, the irrigation water supply meagre, and the population can maintain itself only with the aid of outside labor, the chief source of which is in Albuquerque, or relief.

All six settlements are very old, and all have a similar history. Several hundred years ago the land in the vicinity of each of the springs in the area was settled by a family. The limit to the extension of the irrigated land was set by the available water. Dry farming in the canyon, when the amount of labor involved in the subjugation of the land there is considered, was, and continues to be, too great a gamble to be done extensively. The original irrigated land has been divided and re-divided until the largest present holdings under ditch are not over four or five acres.

The pressure of population on the land was somewhat relieved in the early 1900's by a considerable number of the villagers taking up dry farm lands along the Frost Arroyo in the rolling, wooded country just over the divide. This was especially true of the people from Sedillo, San Antonito, and San Antonio.

POPULATION

The area embraces four precincts whose population over a period of years is indicated in Table I.

Table I

Population of Tijeras Canyon

Source: U.S. Census

Precinct No.	Village	Population 1910	1920	1930
23	San Antonito	346	312	250
7	San Antonio	348	346	240
16	Sedillo			289
22	La Tijera	349	476	467
	TOTAL:	1,043	1,134	1,246

Note: Sedillo precinct was set up between 1920 and 1930 from portions of the San Antonio and San Antonito precincts. Carnuel and Primer Agua are included in La Tijera precinct.

In March 1937, the population, according to a rapid survey of the villages, was as follows:

Carnuel	60 families
La Tijera	19 "
Primer Agua	17 "
San Antonio (Including Canoncito and Rincon)	59 "
San Antonito (Including Frost)	33 "
Sedillo (Including Cedro and Bartola Baca)	52 "

Families, in a sample of 69, average 4.6 persons each. At the same rate, the 240 families would number about 1,100 people. This figure is not comparable to the Census figure given above because it excludes Cedar Crest and Sandia Park. These two communities, however, have been settled by permanent residents largely within the last four or five years, so that many of the people now there were not included in the 1930 census. It appears that the

population in the villages, other than the two resort communities, is not increasing. This appearance has been corroborated by many of the villagers who claim that the native population has been more or less the same for many years now. Of the 240 families in the villages other than Cedar Crest and Sandia Park, 217 are of Spanish-American extraction and are Spanish-speaking. There are only 23 so-called "Anglo" groups.

RESOURCES

LAND

The distribution of cultivated land by village is indicated in Table II.

Table II

Distribution of Cultivated Land By Village

Village	Semi-irrigated Land Acres	Semi-irrigated Land #Owners	Dry Land Acres	Dry Land #Owners	Land-less
Carnuel (1)	135	45	100	5	15
La Tijera (1)	35	15	50	2	4
Primer Agua (2)	-	-	170	12	5
San Antonio (1) (incl. Canoncito, Rincon)	180	50	400	37	9
San Antonito Vil. (2)	35	22	247	15	-
Area SE San Antonito (3) (incl. Frost)	-	-	2500	50	-
Sedillo (2) (incl. B. Baca, Cedro, Sabino)	-	-	1200	49	3
TOTAL	385	132	4667	170	36

(1) Source: Conversation with prominent people in the community and examination of ditch-boss books wherever available.

(2) Source: Soil Conservation Service house-to-house dependency survey.

(3) Source: Soil Conservation Service Agronomy estimate in a Soil Conservation Service Work area.

The land classed as "semi-irrigated" is under ditch from local springs. In no case is the supply of irrigation water adequate. The villagers consider themselves fortunate when they can irrigate more than once per month during the summer. A wide variety of crops, especially vegetable crops, is raised on the irrigated land. Dry farming, as is usually the case in areas of low precipitation, is a gamble. (Precipitation in the canyon varies from 14 inches at Carnuel to 20 inches at San Antonito.) Over a ten-year period, the bean crop from the dry farm land has run as follows: One bumper crop (better than 600 lbs. per acre); two good crops (400 to 500 lbs. per acre); four average crops (300 lbs.. per acre); two failures (seed to 150 lbs. per acre); and one complete failure (not even seed). The dry land is practically all used for beans and corn. The bean crop is the only commercial crop of any consequence; corn is used as feed and fodder for the horses and cows. There is practically no marketable surplus of beans in the villages of Carnuel, La Tijera, San Antonio, and San Antonito. Farming operations in these communities are of an outright subsistence nature. Aside from the vegetable crops that are grown on the irrigated land, the people in the villages that have springs have set out an increasing number of fruit trees--apples, peaches, and wild plums. These trees do not furnish a marketable surplus of fruit, but they add measureably to the food consumption of the people. Apples freeze every other year, and peaches freeze two

years out of three. A little chili is grown, but the amount is limited by the lack of water and by chili wilt which is prevalent. Practically no wheat is grown, and the largest item of purchase in the area is flour.

Some fifty of the two hundred forty consumption groups own close to 3,200 acres of grazing and wooded land in the Tijeras Canyon and over the divide in the rolling country. The fringes of the Carnuel Grant, extending along the Tijeras Creek from Carnuel to Primer Agua are still held in community. The grazing capacity is extremely limited.

The spring on which La Tijera depends for irrigation water is owned by one of the resort camps in the area, and the people use the water only through the owner's kindness, and until such time as he can find another use for it.

LIVESTOCK

As has been stated, the terrain drained by Tijeras Creek is very rough and densely wooded. There is little grazing land available outside the bounds of the Cibola National Forest, and what there is will support very few livestock. A total of approximately 2,200 cattle and horses and 3,000 sheep and goats, mostly goats, are owned by the village families. Two hundred of the owners have permits for use of the National Forest, on which about one-half of the cattle and horses, and one-third of the sheep and goats

graze, forty per cent of them free as domestic livestock. A small fee is charged for the permits for the remaining livestock. It is reported by the Forest Service that the section of the forest used by the village livestock is overgrazed. Reductions in the larger herds have been made, but further reductions will be necessary.

Livestock operations in the area have never been on a commercial scale and at present all the stock, with the exception of three or four herds of cattle of fifteen to twenty head each and six herds of goats averaging about ninety each, is domestic stock. There is little sale of livestock outside the area except in the case of kids for which there is a large market in Albuquerque. At least 75 per cent of the annual livestock increase is used at home. The total cash income from sale of kids and calves is not over $3,000. The horses and burros are used for farm work and to haul wood into Albuquerque. Their yearly increase is used in replacement. The horses are small broomtails and a 2,500-pound load of wood is about all a team can haul. The cattle and their increase contribute most of the local meat supply and aside from some local barter are consumed at home.

BUSINESSES

There are fourteen stores in the six villages. None of these are large enough to furnish employment to anyone other than the owner-operator. About ten of the stores have gasoline pumps,

and these depend for the bulk of their sales on the highway traffic. About 80 to 90 per cent of the purchases at the local stores are in the nature of small emergency purchases. Most of the local sales are under fifty cents. Two dance halls and bars depend on Albuquerque business, as do the fourteen resort camps. None of these business enterprises furnish local employment except the resort camps, and these furnish seasonal employment for some twenty men. The resort camps, dance halls, and the highway filling stations and stores are functionally no part of the communities in the canyon. They are in the same category as the resort villages of Cedar Crest and Sandia Park, as will be explained in the section of the report dealing with those two communities.

The bulk of the local trading is done in Albuquerque, and with mail-order houses--Montgomery Ward, Chicago Mail Order House, and others. With the help of the postmaster in Sandia Park, it was determined that the mail-order business at San Antonito averaged about $40 per family per year. If this figure is true over the entire area, then the 240 families spend close to $10,000 per year with mail-order houses. It is interesting to note that for the last nine years the amount of money order business has remained practically the same. This may indicate that government relief has about equalized the losses from depression-caused unemployment. There is evidence showing that private employment has never given these people more than a relief standard of living.

CASH INCOME OTHER THAN RELIEF

WAGEWORK

The local sources of wagework had dried up long before 1929. Prior to 1905 there were several sawmills that furnished employment for all available local laborers. About the same time there was a lime kiln at La Tijera that employed some six to eight local men yearlong. This was shut down when the Forest Service took over the area, and restricted the cutting of wood for fuel. For sixty years before 1919, the metal mines at Golden and in the San Pedro Grant, about ten miles from San Antonito, employed close to 200 men yearlong. There was plenty of wagework for everybody.

Since 1919, the only wagework nearby has been some small-scale sheep herding and been harvesting in the Estancia Valley and the wagework in Albuquerque. A considerable number always, until 1930 or 1931, went out of the area to the Mogollon Mountains and to other states, where they found employment as sheepherders, or as section-gang hands. As an example showing the extent of this outside employment, from the village of San Antonito representatives from twenty of the twenty-one families went out to work each year prior to 1930. Only three men are away from the village working at present (March 1937). This situation obtains throughout the area, and there are only 12 men, aside from the three already mentioned in San Antonito, from the villages who are employed out of

the region at present. About ten men are now working for the summer camps, and about twelve are working locally on non-relief wagework.

WOODHAULING

The greatest source of cash income for the residents of the Tijeras Canyon villages is the sale of wood in Albuquerque. There are two sources of firewood; one is the San Pedro Grant, owned by a mining company, and the other is the Cibola National Forest. The residents of San Antonito and San Antonio pay nothing for taking wood out of the San Pedro Grant. (It appears that they are heirs of some of the original owners of the Grant). The people from other villages pay 25 cents per wagonload. The National Forest charges 25 cents per cord, the ordinary wagon holding about half a cord, for wood taken out for sale. Wood for domestic use is free.

The San Pedro Grant is preferred by the woodhaulers because the wood from that grant is pinon and juniper and is much more easily disposed of than the wood from the National Forest, much of which is pine and spruce. Furthermore, while cutting is restricted to dead wood on both the San Pedro Grant and the National Forest, supervision of cutting is not quite so rigorous on the Grant, so that a load is more easily made up. The source of firewood by villages is as follows:

San Antonito	San Pedro Grant
San Antonio	San Pedro Grant
Sedillo	Cibola National Forest
Primer Agua	San Pedro Grant: Cibola Nat'l For.
La Tijera	San Pedro Grant: Cibola Nat'l For.
Carnuel	Cibola National Forest

About 180 of the 240 consumption groups average between 40 to 60 wagonloads sold per year. The price received runs from $2.00 to $3.50 per load delivered in Albuquerque. It takes 2 or 3 day's work to make a load, deliver it in Albuquerque, and return home. From conversation with wood and coal yard operators in Albuquerque it appears that there is enough market for all the wood that the village people can bring to the city. Officials of the Forest Service report that cutting of wood is carefully enough supervised that both the National Forest and the San Pedro Grant will remain sources of supply for an indefinite period.

The cash income from this source is consistently close to $24,000 for the villages and is the most important non-relief source of livelihood.

GOVERNMENT EMPLOYMENT AND RELIEF

FEDERAL EMERGENCY RELIEF ADMINISTRATION

During the entire year 1935 the Federal Emergency Relief Administration spent over $11,000 for relief to 138 families in the villages of Tijeras Canyon. Approximately 57 per

cent of the families in the area were on relief and received an average of $82 each.

(See Table - next page)

Table III

Federal Emergency Relief Administration
Expenditures in Tijeras Canyon Villages--1935

Source: Records of Federal Emergency Relief Administration, New Mexico

Village	No. of Families	Amount
Carnuel	29	$ 2,370
La Tijera	17	1,100
Primer Agua	10	800
Sedillo	33	3,300
San Antonio	31	2,547
San Antonito	18	1,200
TOTAL:	138	$ 11,317

WORKS PROGRESS ADMINISTRATION

The Works Progress Administration took over the employables from the Federal Emergency Relief Administration in November, 1935. Table IV shows the expenditures made by the Works Progress Administration during 1935 and 1936.

Table IV

Works Progress Administration Expenditures
in Tijeras Canyon Villages - 1935, 1936

Source: Records of Works Progress Administration, New Mexico

Village	No. of Employees		Amount	
	1935	1936	1935	1936
Carnuel	17	20	$1,802	$5,171
La Tijera	5	6	976	2,269
Primer Agua	4	6	636	2,166
Sedillo	13	18	1,641	5,558
San Antonio	14	16	1,994	6,109
San Antonito	19	23	1,451	8,473
TOTAL:	72	89	$8,500	$29,746

The groups under Works Progress Administration received an average of $118 each in 1935, and $334 each in 1936; this work was the largest single item in the livelihood of the area.

RURAL REHABILITATION DIVISION

The Rural Rehabilitation Division of the Resettlement Administration made loans in the area as indicated in Table V.

Table V

Loans and Collections of Resettlement Administration in Tijeras Canyon Villages, 1935 and 1936

Source: Records of Resettlement Administration, New Mexico

Village	Loans - 1935 - $	Loans - 1935 - No.	Loans - 1936 - $	Loans - 1936 - No.	Collections Cash $	Collections Cash No.	Collections Warehouse Receipts $	Collections Warehouse Receipts No.
Carnuel	0		0					
La Tijera	0		0					
Primer Agua	0		0					
Sedillo	1,319	5	2,621	7	175	4	498	3
San Antonio	0		0					
San Antonito (incl. Frost)	4,014	16	3,312	11	1,575	16	495	5
TOTALS	$5,332	21	$5,933	19	$1,750	20	$993	8

In 1935 and 1936 the Rural Rehabilitation Division gave loans totaling $11,265 in the area, receiving in payment only $2,743, so that a net of $8,522 was added to the livelihood of the area in this manner. This amount constitutes a lien against the communities at the present time.

Prior to 1935 the Farm Credit Administration made some emergency crop and seed loans for the years 1931, 1932, 1933, 1934, and 1935. These loans were made to 55 farmers in the area:

Total amount loaned	$4,062
Amount repaid	1,185
Balance due	$2,877

The only other governmental agency that has handled relief money in the area is the New Mexico Relief and Security Administration which has given small amounts to some of the unemployables.

COMMUNITY

There are three outstanding economic factors in the lives of the people of the communities of Tijeras Canyon as follows:

1. The city of Albuquerque nearby, which forms an ever present market for firewood, and a sporadic market for labor. It is from Albuquerque that the summer residents, and the people who patronize the resort camps, dance halls, and roadside gasoline stations largely come. This influence of the large city is strongest on those villages nearest the mouth of the canyon: Carnuel, La Tijera, Primer Agua. Without Albuquerque, these people would not subsist, as their landholdings are too meagre to furnish them livelihood.

2. The Cibola National Forest which completely surrounds the villages. The use of this forest by the villagers has certain limitations such as fees, methods of cutting which make woodhauling relatively costly in time, and limitation of local stock grazing, which are essential to conservative and sustained use but which at the same time currently limit this resource. Nevertheless, the Cibola National Forest remains a resource for the people, and its administration vitally affects the lives of most of the people.

3. The presence of the Estancia Valley just east of the canyon. This valley made possible some expansion of landholdings when the lands in some of the villages, especially Sedillo, San Antonito, and San Antonio, were no longer adequate to support the population in them. This was done by individuals in the villages taking up dry farm land, some 3,500 acres of it, when it became available in the valley. There is also the fact of seasonal employment in the bean fields, and the fluctuating nature of this employment. The influence of the Estancia Valley on the economy of the villages herein studied is greatest on those villages nearest the top of the canyon, nearest the valley; that is, Sedillo, San Antonito, and San Antonio.

The outstanding factor in the community life of the area is the sharp division between the native villages and the newer resort villages that have developed nearby in recent years. Whereas

the native villages have reached what appears to be the maximum population that the land there and the wagework within reach can support, the resort villages appear to be rapidly expanding. This expansion is closely correlated to the growth and development of Albuquerque. Any future development of the entire area would seem to be linked to the development of the resort camps and villages.

The native population is practically 100 per cent Catholic. The strongest local organization has been the Penitente Brotherhood. The only community-wide organizations are the one built around the use of irrigation water and the school districts. Community effort in the cleaning of ditches, harvesting, and building of houses is common.

The nearest doctor of medicine is in Albuquerque, as is the nearest hospital. Medical attention is unavailable for most of the area. Practically all of the births are delivered by three local midwives. These, according to a teacher in San Antonito, are not very well trained.

DRY FARMING AREA

The eastern half of the area touched by the proposed power line extends from near the foot of the eastern slope of the Sandia Mountains, 21 miles east of Albuquerque, to a few miles to the east of Moriarity. From a rolling wooded slope near the mountains it levels off gradually into the flat, treeless plain of the Estancia Valley. Population is for the most part scattered over the area on individual farms, though on the highway are three small Anglo-American settlements, Barton, Edgewood, and Moriarity. Each of these is the trade center for a small surrounding dry-farming area. Barton, 26 miles east of Albuquerque on U. S. Highway 366, and Edgewood, 3 miles farther east, each consist of a few stores and gasoline stations, a bean warehouse, and a few tourist cabins. Moriarity, 10 miles east of Edgewood, in the flat valley, contains some 30 houses, a few general stores, a post office, and several bean warehouses, clustered together on the railroad which runs north and south through the Estancia Valley.

Previous to 1900 this area like the rest of the Estancia Valley was unsurveyed public domain, uninhabited and unused save by a few large livestock ranches. In 1905 the Estancia Valley, including this area, was opened to homestead entry and was rapidly settled by migrants from the Middle West, most of them from Kansas

and Oklahoma. Professional "locaters" met prospective farmers at the station platforms and located them for $15 to $20. By 1907 all the land suitable for either dry-farming or grazing was occupied and the valley took on the checkerboard appearance which it has today, with small sections of cultivated land regularly interspersed with larger areas of unbroken grazing land. Closer to the mountains around Barton and Edgewood cultivated tracts are frequently surrounded by pinon and juniper woodland.

Directly after settlement, livestock was an important source of income and cultivated land was used principally for the raising of supplemental feed and forage crops. Shortage of water and the absence of extensive uncontrolled areas suitable for grazing in this vicinity, however, led to the early decline in importance of livestock grazing, according to local residents. The cultivation of pinto beans as a cash crop rapidly assumed primary importance. Impetus was afforded this process by the State Agricultural College and a large-scale campaign for the popularization of pinto beans. In 1910 the first carload of beans was shipped out of Moriarity. The increase was rapid, till in 1929, 180 carloads of beans were shipped out of Moriarity alone. Primary dependence today is upon pinto beans as a cash crop, most farms having only a few head of domestic livestock and about 100 acres in cultivation, 90 per cent of that acreage in pinto beans.

POPULATION

The highest point in the population of this area was reached in 1910, a few years after its initial settlement. Between 1910 and 1920 there were small fluctuations and in the three-year drought period ending in 1923 a measurable decrease. From 1920 to 1930, the population of Moriarity, McIntosh, Otto, and Golden precincts, an area approximating that under consideration, decreased from 1,307 to 803. Since 1932 there has been a steady increase in the population of the area, resulting, it is reported, from the return of a large number of former residents. The population of the area is now estimated (1) at approximately 210 families or 1,000 people, including 30 families around Barton, 30 families around Edgewood, and 150 families in the vicinity of Moriarity. Of the total 210 families, at least 170 are Anglo-American, the remainder Spanish-American.

The absence of any extensive unused resources renders it unlikely that population will increase further.

RESOURCES

Total cultivated land in the area is estimated at 20,000 acres, distributed in close to 200 farms. Pinto beans occupy some

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(1) On the basis of (a) the number of children in school
(b) the number of registered voters
(c) the number of families receiving mail at the local post offices.

90 per cent of the cultivated acreage, the remainder being devoted principally to corn and other forage and feed crops. Farms are relatively highly mechanized. According to the U. S. Census of 1930, the value of farm machinery was $392 per farm in Moriarity precinct. Since that date, and the bumper crop of 1929, a perfected row crop tractor has been introduced and at present less than 10 per cent of all the farms in the area use horse-drawn equipment. No labor is employed on these farms except for a few weeks at harvest time when Spanish-Americans from the nearby mountain villages are hired at the current rate of $1.00 per day. The use of tractors has led to a tendancy to increase the acreage in cultivation, the average crop land per farm in Torrance County, of which this area is representative, having increased from 97 acres in 1930 to 108 acres in 1935. Total crop land in Torrance County increased in the same period from approximately 97,000 acres to 162,000 acres. It is reported locally that almost all the land possible of cultivation in the area under consideration is now in use. Only around Moriarity is there reported to be any unused cultivable land, and this is regarded as poor quality land which has never been successfully cultivated.

Crop yields in the area are directly dependent upon moisture conditions. Precipitation is low, however, and farming is consequently something of a gambling enterprise. Annual precipitation in the area over a recent eleven-year period averaged about

14 inches, ranging between 8 and 18 inches and being under 15 inches 8 years out of 11. Yields have consequently varied tremendously with, in the past 15 years, 3 years of complete crop failure. Prices have been equally subject to fluctuation. Table VI indicates the yields and prices obtained by one fairly typical farmer operating slightly over 100 acres in the vicinity of Barton.

Table VI

Yields and Prices of Pinto Beans on a Farm Near Barton

Source: Farmer's Records

Year	Yield per Acre	Yield per 100 lbs.
1927	300 lbs.	4.75
1928	700 lbs.	4.50
1929	990 lbs.	4.00
1930	300 lbs.	1.15
1931	400 lbs.	1.20
1932	600 lbs. (1)	2.00
1933	600 lbs. (1)	2.60
1934	Failure	-
1935	300 lbs.	3.10
1936	170 lbs. (2)	4.40

(1) This was an exceptional yield. The average in these years is reported to have been 350 pounds.

(2) The average in this year was reported to have been 100 pounds.

Over a ten-year period the yield per acre on this farm averaged over 400 pounds. Around Moriarity, where precipitation is

slightly lower, yields have consistently averaged about 100 pounds less per acre than in the area closer to the mountains around Barton and Edgewood.

Gross income from beans on this farm has varied in ten years from zero to $3,900, has been under $1,000 five years out of the ten, and under $500 four years out of these five. Cash production costs, including such items as taxes, payments on mortgages and other loans, payments to labor, and operating costs of machinery, but not including non-cash costs such as allowances to the farmer for his own labor, have in the past 7 years been approximately $5 per acre. On this basis, net income from crops on the farm taken as an example would have been, in three years out of the past seven, zero; in two years, between $200 and $400; in one year about $700; and in one year about $1000. The results are evident in the steady increase in tenancy in Torrance County, of which this area is representative, from 12 per cent in 1920 to 28 per cent in 1935. In the past, also, years of poor yields were followed by the abandonment of farms and a decrease in the area population. This process does not appear to have followed the crop failure of 1935.

Livestock grazing is not an important enterprise in the area, only about seven families being chiefly dependent on livestock for livelihood. Of these seven families, three have herds of 900 to 1000 sheep, and four have herds of 60 to 100 head of

cattle. All of the grazing land is either private or state land and is generally leased by the livestock operators. Most farms, in addition, have a few milk cows pastured and fed on the farms. Milk is sold to several dairies and truckers, and many farmers report incomes from this source ranging between $10 and $30 per month.

NON-AGRICULTURAL CASH INCOME

Aside from government relief work there are few wage work opportunities in the area. Harvest labor is recruited from the Spanish settlements in the nearby hills. There are some ten stores and cafes in the three settlements which give permanent employment to a total of ten persons in addition to their proprietors. Three bean warehouses provide occasional employment for a small number during the bean harvest season. The only other wage income is that of seven school teachers and two postmistresses.

GOVERNMENT ACTIVITY

The Federal Emergency Relief Administration in 1935, after the total crop failure of 1934, gave assistance totaling $6,869 to 97 families. In the last two months of 1935, the Works Progress Administration commenced to function and gave employment to 11 persons who earned $1,228. In 1936, Works Progress Administration employed 29 persons who earned a total of $9,406. The Rural Rehabilitation Division of the Resettlement Administration

during 1935 and 1936 made loans totaling $46,000. Of this, $14,000 has been repaid, a small amount is not yet due, and the balance is delinquent. Of the amount repaid approximately $3,000 is in warehouse receipts (receipts held by the Resettlement Administration for stored beans credited at the going market price to the debtor).

The Federal Land Bank holds mortgages on 52 farms, totaling $56,000. These are long-term loans with repayment spread over 34 years. Unlike most other types of loans, the semi-annual payments on these have been promptly and regularly met.

The Farm Credit Administration through its emergency crop and seed loan section has made a large number of small loans over a period of years which are heavily delinquent. Data on these loans is not readily available for Barton and Edgewood. In the vicinity of Moriarity, 27 loans totaling $3,892 have been made, of which $1,944 remains to be paid and is overdue. It is reported that during recent years of low yield, short-term loans from various federal agencies have been used for subsistence, irrespective of the purpose for which they were presumably made. The availability of this type of credit and the absence of attractive opportunity elsewhere may have been the chief factors operating to maintain population at a constant level despite years of crop failure and low yields.

CONCLUSION

The chief determining force in the life of the area is precipitation, or the lack of it. Yields are directly dependent upon precipitation and are equally uncertain. Attempts to overcome this uncertainty by pump irrigation have been made without success. A number of farms do use pumped water for the irrigation of garden plots occupying fractional parts of an acre. The cost, under the conditions of soil and water-table level which prevail, have been such as to prohibit pump irrigation on any wider scale in the judgment of all who have heretofore considered the question. The constant uncertainty of yields in combination with the ample hazards of cash crop farming under any physical conditions make insecurity the dominant characteristic of the economy of the area.

SUMMER RESIDENTIAL COMMUNITIES

It was pointed out in another section of this report that Cedar Crest and Sandia Park had certain characteristics that differentiated them sharply from the other communities in the Tijeras Canyon. These two communities, it was said, were resorts and summer camps, and their population did not depend upon local resources for its income.

Cedar Crest and Sandia Park are the two post offices, but the communities that will be treated in this report string from Tijeras Canyon itself up the San Antonio Wash some six or seven miles to Sandia Park. These communities are actually groups of houses and cottages, each group owned by a single individual, and rented out for varying periods of time to people from Albuquerque, to tourists, and to health-seekers. In short, they are tourist and summer camps.

These camps have all been built away from the cultivable land and close to the mountainside. Their location has been determined largely by the availability of water, and the only locations with water that were not already taken up were extremely rugged. These camps, then are occupying land that would not otherwise be used by the native inhabitants.

The history of this resort area is not long. The first Anglo-American to build a cottage away from any cultivable land

was a Mr. Webb, who now owns the camp at Cedar Crest. He came to the locality as a healthseeker in 1923. From 1923 to 1928 the growth of the summer camps was slow. Since 1928 the growth has been very rapid, as shown by Table VII.

Table VII

Growth of Summer Residential Communities in Tijeras Canyon

Source: Local Informants

	Cottages for Rent	Summer Houses	Permanent Resident Families	Total
1928	21	6	7	34
1937	104	42	36	180

Sixteen of the 104 cottages were built in the past two years. At present, Mr. Webb claims, there is more demand for cottages than they can supply. Twenty additional cottages are under construction at one of the camp-sites. There are now a total of twelve resort camps in the area, comprising 104 cottages. Three of the twelve camps now operate private electric plants. All the camp owners feel that electric power is essential to their future development.

(See Table VIII - next page)

Table VIII

Resort Camps in Tijeras Canyon - 1937

Source: Field Survey

Name	No. Cottages	Private Electric Plant
Carlito Springs	26	
Oasis & Hillside Camp	4	Yes
Caveloy's Place	6	
Tijeras Store Camp	10	
Sedillo Hill Camp	7	Yes
Well Country Ranch & Casa Loma, Cedar Crest Resort, and Forest Park	37	Yes
Triplett's Place	2	
Boehmer's Place	2	
Calby & Bennett's Camp	10	

There are five or six stores in the area that depend entirely on the trade from the patrons of the camps. There is no local source of income, except a few small garden patches, for any of the people living in these camps. Eighty per cent of all the visitors are healthseekers, and the Albuquerque Chamber of Commerce has furnished a great deal of help to the camps by referring inquiries from healthseekers to the camp owners. The camp owners then follow up the leads, and most of their business is secured in this manner.

The cabins rent for from $22 to $45 per month in winter, and for from $25 to $75 per month in summer. The owners figure on

getting an average of $40 per month per person for room and board. One camp gets as much as $75 per month per person for room and board.

There are, in addition, scattered through the canyon three dance halls and bars and a number of filling stations largely dependent upon patronage by Albuquerque residents.

NOTE ON SOURCES

The material included in the foregoing reports is derived from a variety of sources. For each of the three unit descriptions the sources are listed below.

Tijeras Canyon Villages:

Human Dependency Survey of San Antonito, Sedillo, Primer Agua, 1937. Soil Conservation Service.

Records of Federal Emergency Relief Administration, Works Progress Administration, Rural Rehabilitation Division of Resettlement Administration, Federal Land Bank, Farm Credit Administration, Forest Service, Soil Conservation Service.

U. S. Census Reports

Interviews with local residents.

Dry Farming Area:

Records of Federal Emergency Relief Administration, Works Progress Administration, Rural Rehabilitation Division of Resettlement Administration, Federal Land Bank, Farm Credit Administration.

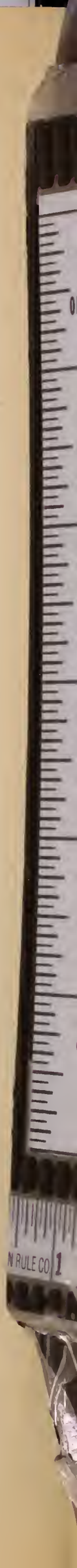
U. S. Census Reports

Interviews with local residents, storekeepers, officials of government agencies.

Summer Residential Communities:

Interviews with local residents, camp owners.

Field observation.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